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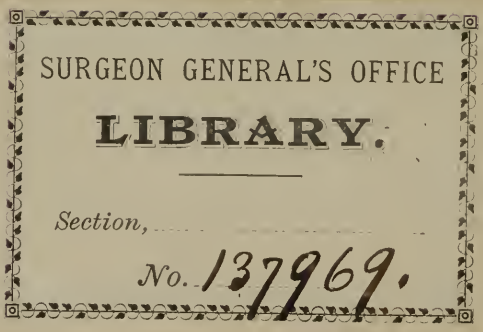

THE USE AND ABUSE

OF

EXPERT TESTIMONY.

BY

J. SNOWDEN BELL.

THE MEREDITH PRIZE ESSAY,

IN THE LAW DEPARTMENT OF THE UNIVERSITY OF PENNSYLVANIA.

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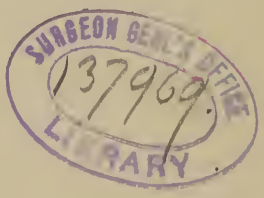

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THE USE AND ABUSE

OF

EXPERT TESTIMONY.

Civilization has long excluded from the category of evidence the superstition and barbarism of the ordeal, the corsned, and the wager of battel, and applied in their stead a rational and systematic procedure for the investigation of truth in the determination of issues of fact by Courts of justice. It is a cardinal principle of the law of evidence, from which a specific rule to the same effect results, that the *best* evidence of which the case, according to its circumstances, is susceptible, must always be adduced,[1] and the object and propriety of the rule are obvious, in that the natural tendency of every man is, and should be, to support his assertions and views, when urged before a tribunal, whether it be one man, the public generally, or a selected few, by the strongest and most convincing corroborations he is able to furnish; and the failure to do so, being incompatible with both reason and

[1] Bull. Nis. Pr. 293; 1 Greenl. Ev. §§ 50, 84; Roscoe Ev. 1; 1 Starkie Ev. 102, 388; 1 Phillips Ev. 567; 1 Taylor Ev. 392.

manifest duty, not only impedes the formation of an accurate judgment, but rightfully institutes suspicion of insincerity or untruth on the part of him who omits to produce that which he cannot, in the nature of things, have any rightful grounds for withholding. Subordinate to, and a necessary result of the rule demanding the production of the best evidence, is that which provides that, in general, the testimony of a witness is to be confined to matters of fact within his own knowledge and is not to be given as to his opinion,[1] and while the converse, to wit: that opinions are *not* evidence, would appear equally true, yet such proposition is far from taking the form of an established rule of law, nor do the various cases in which the law recognizes the competency of opinions, constitute, in any wise, exceptions to the rule requiring the best evidence, or fail to illustrate the universality of its application. There are numerous instances in which the opinions of witnesses are of assistance and value in elucidating the facts testified to by others, many, in which such opinions are indispensable, and some, in which opinions are, from necessity, the best, because the only evidence attainable. In the latter case they are clearly within both the letter and the spirit of the rule, the ulterior question of their sufficiency being, as with any other evidence, for the determination of a chancellor or jury.

Expert testimony comprises the statements and

[1] 1 Greenl. Ev. 434; Roscoe Ev. 98; 1 Phillips Ev. 778; 2 Taylor Ev. 1225.

opinions, with the reasoning upon which such opinions are based, given in evidence by those, who by reason of their knowledge, skill, or experience in a particular science, art, or trade, are considered by the law to be fitting exponents of questions relating thereto.[1] While, as a general proposition, the propriety and necessity of the admission of testimony of this description has not been denied by either the bench or bar, yet there are few among the senior members of either class who have not, at some period of their professional experience, had occasion to note the defects and abuses attendant upon the administration of the system, and to recognize the desirability of reforming the evils which attach, rather to the method in which such evidence is obtained, applied, or sought to be availed of, than to any inherent defect or error of principle in its character. The text books and reports, when discussing what may be termed *the testimony of experts*, more accurately than "expert testimony," will be frequently found to censure, and seldom to commend, its practical administration, and, indeed, the unprofessional mind, in view of the general tenor of expression of the authorities, finds it difficult to understand why a system which would seem to be regarded as rather pernicious than beneficial, should be even tolerated by the law. A standard text book remarks upon this subject: "Perhaps the testimony which least

[1] 1 Greenl. Ev. § 440; 1 Phillips Ev. 778; 2 Taylor Ev. 1228; Roscoe Ev. 98.

"deserves credit with a jury is that of *skilled wit-*
"*nesses.* These gentlemen are usually required to
"speak not to facts but to *opinions*, and when
"this is the case it is often quite surprising to see
"with what facility and to what an extent their
"views can be made to correspond with the wishes
"or the interests of the parties who call them.
"They do not indeed wilfully misrepresent what
"they think, but their judgments become so warped
"by regarding the subject in one point of view
"that even when conscientiously disposed they are
"incapable of expressing a candid opinion. To
"adopt the language of Lord Campbell, 'they
"come with such a bias on their minds to support
"the cause in which they are embarked that hardly
"any weight should be given to their evidence.'"[1] In the United States Supreme Court the opinions of experts have been characterized as "reveries," and they themselves stated to be "as often skillful "and effective in producing obscurity and error as in "the elucidation of truth."[2] It will be remarked, however, that it is the personal weakness of the individual and not the nature of the duty in which he is engaged, that constitues the gravamen of this objection, and, while the eradication of the prejudices of human nature and the prevention of the warped and distorted views which naturally arise from in-

[1] 1 Taylor Ev. 74.

[2] McCormick *v.* Talcott, 20 Howard, 402, Daniel, J. Diss. opin. See also, Winans *v.* N. Y. & E. R. R., 21 Howard, 88; and, to the same tenor, a recent case, American Middlings Purifier Co. *v.* Christian et al., 4 Dillon, 459.

terest, ambition, or dogmatism, would doubtless be a task beyond the abilities of legislators and jurists, yet we may reasonably believe that a reformation which consists in removing the testimony of the expert, as far as may be, from the influences which tend to impair its usefulness, is neither impracticable nor remote.

With the rapid and constantly increasing development of scientific research and discovery, which the spirit of modern institutions both excites and sustains, and, as a corollary thereto, the establishment of a higher and more elaborate standard of technical education and experience as a requisite for the attainment of acknowledged proficiency in the arts and sciences, the maxim *cuilibet in sua arte perito credendum est* is of even more apt application to-day than in the time of my Lord Coke. The creation and cultivation of specialties has increased indefinitely, and extended from the arts and trades to the learned professions, and the study and application which is required of each individual in his own particular department, whether of science, art, or commerce, necessarily excludes him from the attainment of any considerable degree of familiarity with pursuits not germane to that which, through education and habit, has become a common incident of his existence. The questions of fact which Courts are called upon to adjudicate are more and more frequently, in the advance of years, based on scientific laws or technical practice, a proper under-

standing of which is indispensable to the determination of the cause, and which cannot reasonably be presumed to be within the knowledge of the ordinary juror, or even to be familiar to the mind of the more accomplished chancellor. The necessity, therefore of a competent and reliable exponent, in the person of a skilled witness or expert, remains an obvious one, and while, as we have seen, the testimony of witnesses of this class is open to objections, their employment is, nevertheless, under certain circumstances, unavoidable. This being admitted, it would seem that there needs but the imposition of such reasonable restrictions as may tend to alleviate, if not remove, its attendant objections, to render skilled evidence a valuable and desirable auxiliary to the administration of justice.

In the examination of the subject of expert witnesses and the testimony given by them in causes at law and in equity, we shall find, as in almost every other branch of the administration of the law, that while authorities differ in matters of practice and minor details, the general rules of evidence applicable are few, simple and free from conflict one with the other. The subject may be considered generally under the heads of the qualities and requisites of expert witnesses; the nature, use and legitimate application of the testimony of such witnesses in the determination of causes, and the undue exercise of their functions by expert witnesses; for, when strained from its *fair* use, expert testimony "revolts to vice and stumbles on abuse."

I. As to the Qualifications of a Competent Expert Witness.

The legal signification of "expert" (*expertus*) corresponds strictly with the ordinary acceptation of the term, namely: "One who has skill, experience, or "peculiar knowledge on certain subjects of inquiry in "science, art, trade or the like."[1] His ability or sufficient capacity in the art or science which he professes to be skilled or *expert* in, is the ground by virtue of which he is admitted as a witness, and it is manifest that, *cœteris paribus*, the value of his testimony will be greater or less in proportion as it may appear that his claims to proficiency are or are not well founded. And this of necessity, because his evidence is admissible only for the reason that it relates to matters which the Court or jury, in common with all men not skilled or experienced in the technical matter under consideration, are not or cannot reasonably be assumed to be familiar with. It therefore naturally follows, that he, on whose explanations and elucidation, the arbiter must rely for the facilities of arriving at a correct judgment upon the matters at issue before him, should be fully competent to understand, apply and explain the rules and practice of the particular department as to which he is called. The *degree* of skill which the expert is required to possess, is an uncertain quantity; the

[1] Webster Dic.; Bouvier Law Dic. *in verb.* Expert, Opinion; 1 Greenl. Ev. § 440; 1 Phillips Ev. 778.

decision as to his competency in point of knowledge being a matter for the Court,[1] nor is it necessary that he should possess more than the average ability of those engaged in his particular art or profession, or be actually engaged in the practice thereof.[2] Generally speaking, the fact that an alleged skilled witness has been educated in or practiced his art for such reasonable period as would enable one of ordinary intelligence to become familiar with it, will make him competent as an expert. The question of the *sufficiency* of his testimony is for the jury, and in passing upon his qualifications, the Court may properly lean towards the side of liberality. The exercise of the right of cross-examination will enable his incapacity and resultant errors, if such exist, to be unveiled and refuted, and by such exhibition of the inherent weakness of his testimony, its effect towards promoting a false and unwarranted judgment, would be neutralized or destroyed. It may be urged, and the objection is not without some force, that for the accomplishment of this end such an approximate degree of expert ability is required on the part of the cross-examiner as cannot reasonably be assumed to belong to one in his profession, but it must be remembered that the latter is, or should be familiar with the grounds which his own side seeks to maintain, and, in acquiring this knowledge, if he has

[1] Taylor Ev. 63; Ardesco Oil Co. *v.* Gilson, 63 Pa. 146; Sorg. *v.* St. Paul's Cong., *id.* 156; Del. & Ches. S. T. Co. *v.* Starrs, 69 Pa. 36; Jones *v.* Tucker, 41 N. H. 546; State *v.* Ward, 39 Vt. 255; Howard v. Providence, 6 R. I. 514.

[2] Tuller *v.* Kidd, 12 Ala. N. S. 648; Hall *v.* Costello, 48 N. H. 176.

informed himself by the opportunities at his command, including the advice and explanations of his own skilled witnesses, of the false or unwarranted positions and deductions which his adversary is likely to assume; he can be prepared in advance to meet and overthrow them in cross-examination, and thus strengthen his case by the very means which have been employed to attack it. The crucial test as to the competency of a witness offered as an expert to give testimony as such, is the solution of the question as to whether or not the jury or persons in general who are unexperienced in or unacquainted with the particular subject of inquiry, would, without the assistance of one who possesses a knowledge, be capable of forming a correct judgment upon it.[1] If the matter in question be one upon which any one of ordinary intelligence, could, without peculiar habits or course of study, form a correct opinion, it is clear that an expert would, in such case, simply serve to anticipate and usurp the duty of the juror, and his opinions as a witness cannot be received. If, on the other hand, the subject be a scientific one, or so far an outgrowth or development of scientific laws or technical procedure as to require study, experience or practice to understand it, the opinions of unskilled persons would be of little or no value, and the assistance of experts is proper and desirable in leading the minds of the jury to an intelligent judgment.

[1] Carter *v.* Boehm, 1 Sm. Lead. Cas. 286, *note.*

The most important class of civil actions in which the testimony of experts is made use of, is, in the United States, that comprehending causes at law and in equity arising under the laws relating to Patents. In the great majority of these, the questions to be determined relate to the validity and scope of Letters Patent, and to charges of infringement upon them. It would be difficult, if not impossible, to specify a subdivision of manufacturing, commercial or agricultural industry to which inventive ability has not been applied, and from the tack that secures our carpets, to the locomotive engine that speeds us upon our journeys, there is scarcely a product of the handiwork of men that does not, either as completed or in the course of its manufacture, involve the employment of patented subject matter. With manufacturing interests engaging a capital which is enormous, close and active competition in every department of trade, and a list of existing Patents aggregating above 177,000, the field of litigation in this class is a wide one, and as the dockets of the Circuit and Supreme Courts indicate that in it there is no lack of suitors, the expert witness finds frequent occasion for the exercise of his functions.

The statutory provision requires that the description or specification which is to be filed by every applicant for a Patent shall set forth his invention "in such full, clear, concise and exact terms as to enable "any person *skilled in the art or science to which it* "*appertains*, or with which it is most nearly connected,

"to make, construct, compound and use the same,"[1] and the language of the statute thus plainly indicates the testimony of an expert (skilled in the art) to be the best evidence for establishing the sufficiency of the specification. Damages for infringement may be recovered by action on the case or suit in equity,[2] and there are but few cases in which the subject matter involved is of a nature so free from scientific technology as to warrant the parties to the suit in attempting to maintain the truth of their respective allegations without invoking the aid of those "skilled in the art" under consideration.

The requisites of an expert in Patent causes are, as in other cases, the skill and proficiency resulting from education and experience, and these may exist and be available as well in practical artisans, as in those who by education have become theoretically conversant with the laws and principles of a science without occupying themselves in the practical duties of its application. Each of these classes is recognized by the law, although not specifically named in the statute, and the circumstances of particular cases readily indicate their relative value as a source of information. Mr. Justice Story, referring to such a classification of expert witnesses, held the members of each to be competent and appropriate, for particular purposes respectively; the practical workman to decide as to the sufficiency of the specification, and the scientific

[1] Title LX., Rev. Stat. § 4888.
[2] Title LX., Rev. Stat. §§ 4919, 4920, 4921.

mechanic to pass upon the questions of novelty of the invention, or identity or diversity of mechanical structures, contrivances, or equivalents, as to which latter questions, scientific mechanics were the *very highest witnesses*, and were "far the most important "and most useful to guide the judgment and to enable "the jury to draw a safe conclusion whether the modes "of operation were new or old, were identical or "diverse."[1] The extent of the expert's knowledge, as the measure of his sufficiency, to whichever class he may belong, will vary with the nature of the particular art or manufacture regarding which he testifies, and the comparative degree of technical education and practice which would qualify an unskilled person to become familiar with its principles and operation, a desirable, though not essential element of the expert's value being his facility of imparting his technical knowledge by the use of non-technical words.

It would doubtless be unprofitable as well as tedious to investigate and detail the numerous other specialties which afford occasion for the employment of the testimony of skilled witnesses, more especially in view of the difficulty which arises in fixing accurately the line of demarcation between the cases in which the opinions of specialists possess such peculiar or intrinsic value as to render them acceptable as testimony by the Courts, and those in which opinions are not the best evidence, because they do not relate to a scientific subject properly so called, and, if rightly

[1] Allen *v.* Blunt, 3 Story, 748.

formed, can be deduced only from the premises upon which the cause is to be determined by the arbiters assigned by the law to that duty; the solution of which question, as we have before observed, rests with the Court itself in each case. We may, however, in this connection, briefly notice two classes of cases in which expert testimony is largely employed, these being, respectively, matters involving questions of medical science and of handwriting; each of no inconsiderable importance both in civil and criminal law.

There is probably no department of human knowledge in which the necessity for the possession of ample education and acquirements will be more universally acknowledged by an intelligent community than in the medical profession. The instinct of self preservation impels all men of sound mind and ordinary prudence to the observance of the rules of health, so far as known to them, and to a speedy recourse for advice and assistance, when suffering from the effects of injury or disease, to a physician in whose skill and ability they believe themselves entitled to confide. The importance of these qualifications to him who seeks the aid of medical science, and the detrimental or possibly fatal results of a failure to obtain them, prompts men to scrutinize with care the professional reputation of the practitioner whose services they contemplate making use of, and the reasons for requiring a well established standard of ability are no less weighty with a Court in determining the compe-

tency of a medical man as a skilled witness than with an individual. The admission of the evidence of medical experts, is stated to have been first recognized by the German Emperor Charles V., and incorporated in the "Caroline Diet," framed at Ratisbon in 1532,[1] and in more modern days appears, amongst other instances, under the writ *de lunatico inquirendo.* From its beginning it has been of constant and increasing growth, and is found at the present day to be of considerable use, both in civil and criminal cases, serving to elucidate the cause or manner of injuries and death, the determination of the question of sanity or insanity, the effects, probable or actual, upon health, of particular structures or operations, and various other matters as to which a knowledge of the laws and practice of medicine is necessary.

The qualifications of the medical expert are not dependent upon his having been educated or an upholder of the doctrines of any particular school,[2] to determine the superiority of which would involve the possession of equal or superior expert abilities on the part of the Court, and it will suffice if he has studied his profession without being actively engaged in the practice of it.[3] His special knowledge must be fully established to enable him to be examined, and, when testifying he must be strictly confined to such special knowledge.[4] Like the mechanical expert he must give

[1] Elwell Malp. & Med. Ev. 285.
[2] 1 Wharton Ev. § 441.
[3] 1 Greenl. Ev. § 440.
[4] Elwell Malp. & Med. Ev., ch. XVIII, notes 11, 12.

the reasons on which he founds his opinion,[1] and he is not permitted to draw inferences of fact from the evidence, but must declare his opinion upon a known or hypothetical state of facts.[2] Judge Story, in the case last cited, lucidly indicates the proper form of examination to be, to take the opinion of the expert upon such a state of fact as is deemed by counsel to be warranted by the evidence, and if the jury find the assumed state of fact to be proven, the opinions of the expert thereon are admissible. The diverse character and extended range of the subjects of inquiry render it impracticable to limit the exercise of the expert's functions to a special branch of medicine; thus a physician not an oculist, has been permitted to testify as to injuries of the eye; physicians not veterinary surgeons, as to diseases of mules, other persons not veterinary surgeons, as to diseases of animals; a physician not making insanity a specialty, as to whether a person he visits is insane; a witness not a chemist, as to whether certain stains are apparently blood.[3]

The question of sanity or insanity is often made a leading issue in capital criminal cases, and its correct determination in reaching the ends of justice is of the highest importance. A rule which has been laid down for the ascertainment of the qualifications of an expert witness in the matter of insanity is broad in its terms, and would seem rigid in its requirements

[1] *Ex parte* Springer, 4 Clark's Cases (Penna.), 188.
[2] U. S. *v.* McGlue, 1 Curtis, 9.
[3] 1 Wharton Ev. § 439.

under any but extremely liberal construction. It declares that "forensic psychological medicine is "the specialty, and an expert in this specialty must be "skilled in three departments of science, (1) law, "sufficient to determine what is the 'responsibility' "which is to be the object of the contested capacity; "(2) psychology, so as to be able to speak analytically "as to the properties of the human mind; (3) "medicine, so far as concerns the treatment of the "insane so as to speak inductively on the same "subject. If either of these factors is wanting, a wit-"ness cannot be technically an expert."[1] In practice, however, it is found that parties are usually careful to select gentlemen whose professional standing is of so high a character as to leave little or no doubt regarding the propriety of their admission as experts.

In this connection we may note an apparent anomaly in the administration of the rules of evidence, in that while the law establishes the high standard of ability indicated in the rule just quoted, as essential in the *expert* witness called to testify in questions relating to the subject of insanity, the Courts, both in England and the United States admit the opinions of those who are not and do not claim to be experts, upon such questions. In *State* v. *Pike*,[2] the majority of the Supreme Court of New Hampshire held, upon the authority of *Boardman* v. *Woodman*,[3] that wit-

[1] 1 Whart. & Stille, Med. Jur. 275.
[2] 49 N. H. 399; S. C. 6 Amer. Rep. 533.
[3] 47 N. H. 120.

nesses not experts cannot give their opinions upon questions of insanity. From this doctrine Doe. J., dissented, in a lengthy and elaborate opinion, in which he cites in support of his views, a large number of authorities, English and American, and the ground which he adopts in favor of the competency of non expert testimony is, substantially, that from the general and indefinite nature of the inquiry, it is not susceptible of direct proof, nor would it be practicable for the witness to describe to a jury, with any reasonable decree of accuracy or sufficiency, the peculiar circumstances or the behavior of the person as to whose mental condition the inquiry relates, which led him to form the opinion he is ready to express under the solemnity of an oath. In such case it would seem that no better evidence than that of opinion is available, and if this be conceded, the rule demanding the best evidence is complied with, and the variance from the strictness of the requirements as to expert witnesses, is in no degree incongruous or illogical. The later case of *Commonwealth* v. *Sturdivant*,[1] sustains the position assumed by Judge Doe. Again, "it has always been the rule in Pennsylvania that "after a non-professional witness has stated the facts "upon which his opinion is founded, he is permitted to "state his opinion as to the sanity or insanity of the "testator."[2]

Skilled evidence in the matter of handwriting has

[1] 117 Mass. 122.

[2] 1 Redf. on Wills, 141; Pidcock *v.* Potter, 68 Pa. 342.

been competent from a comparatively early period, and will be frequently met with in practice. The Roman law permitted the comparison of handwriting, and the duty of making comparison was properly assignable to experts;[1] but by the English common law such comparison was inadmissible, although the ecclesiastical Courts admitted comparison of hands.[2] The authorities in the United States rest on the common law rule, making an exception which the Supreme Court, in *Moore* v. *U. S.*,[3] held to be equally well settled with the rule, namely: that a paper, the genuineness of which is questioned, may be compared by experts with another paper admitted to be in the handwriting of the party, and in evidence in the cause. The Pennsylvania Act of 31 March, 1860 § 55, allows expert testimony to be admitted in criminal cases as to counterfeited bank notes, without previous proof of handwriting,[4] and a similar statutory provision prevails in Iowa.[5]

In the case of the ordinary witness, he must, as a matter of public duty necessary to the administration of justice, testify as to facts which have come within his knowledge, and his attendance for the purpose will be enforced by the Court whenever necessary. No such obligation exists on the part of the expert witness. The special knowledge possessed

[1] 1 Wharton Ev. §§ 711, 718.
[2] 1 Wharton Ev. § 712, note 1.
[3] 1 Otto, 270.
[4] 1 Brightly's Purdon, 631.
[5] Baker *v.* Mygatt, 14 Iowa, 131.

by him in his particular science or trade, is his individual property, acquired in many cases by years of study and labor, and utilized as a means whereby he acquires his livelihood. It is manifestly the plainest justice that the litigant who desires the benefit of his services should not be permitted to acquire them without rendering him the remuneration which he fixes as their value, and it is therefore well settled that the attendance of an expert witness will not be made compulsory, and the party who selects him must pay him for his time and services.[1] If the case be one of a public nature, where the public safety requires the investigation, the right to compel the attendance of an expert witness may, upon the principle of *salus populi suprema lex*, be enforced as a necessary incident of government itself.[2]

II. The use and Legitimate application of Expert Testimony.

By the Roman law experts (*artis periti*) could be called by the *judex* at his own discretion, when not already called by the parties, in order to acquaint himself with physical laws or phenomena, of which he was not personally cognizant, and the canon law appears to have adopted the same practice.[3] This early recognition of the usefulness of the testimony of

[1] Webb *v.* Payne, 1 Carr. & Kerw. 23; *In re* Roelker, 1 Sprague Dec. 276; Clark *v.* Gill, 1 Kay & Johns. 19.

[2] 1 Am. Law Review, 63.

[3] 1 Whart. Ev. § 434, note.

skilled witnesses has been approved and sustained by modern jurisprudence, but while the advance of knowledge has both increased indefinitely the field of application of this branch of evidence, and laid down numerous rules for its practical administration, we find that in this, as in other instances, refinement and elaboration have not uniformly conduced to the attainment of the desired object, and that under the guise of the ascertainment of truth, error and fraud may be disseminated and sustained.[1] The true province and duty of the expert witness is, in brief, in no wise to *substitute* opinion for fact, but to offer reasonable and well grounded opinions as a basis of consideration where facts themselves are, from the nature of the case, inapplicable or insufficient. The strength and conclusiveness of these opinions are subject to the same tests, by the minds of the persons who are to pass upon them, as are those in the case of evidence as to direct facts, and the instructions of a Court facilitate the determination of a case upon expert evidence, in the same manner and to the same extent as they do with evidence of fact. No matter upon what subject experts testify, they simply supply *data*, the competency, relevancy, and weight of which the Court judges, and upon which the Court declares the law.[1] The relative degrees of importance of the expert's testimony have been well defined as being: first, where he states precise and well settled scientific facts, or necessary conclusions therefrom, in which

[1] Whart. & Stille Med. Jur. § 280.

case his opinion is entitled to great weight; second, where he gives only probable inferences from the facts stated, where his opinion is of less importance; and third, where the opinion being speculative, and admitting of another opinion consistent with the facts, is entitled to but little weight.[1]

The question of the identity of principle of two machines is generally the governing issue in the trial of Patent causes, and it is obvious that this, which must, to a greater or less degree, be a matter of opinion, can be most satisfactorily determined in the majority of cases by the opinions of experts. Their opinions are then the best evidence that can be adduced, and are competent upon such a question.[2] This, however, is always subject to the limitation that evidence of fact be not attainable, and if such be produced, care must be taken that the case does not prove similar to that in which, regarding two machines, there were oaths of witnesses that they were the *same*: "But the stubborn fact that Hunt's machine would "*not* work, and that Howe's *would*, made the oaths of "the witnesses as inoperative as the machine."[3]

Again, upon a similar principle, the testimony of experts may be material and useful to indicate and explain differences between an original and a reissued Patent, and is competent for that purpose.[4] So also the

[1] Gay *v.* Union Mut. L. I. Co., 9 Blatchf. 154.

[2] Barrett *v.* Hall, 1 Mason, 471; Conover *v.* Rapp, 4 Fish. Pat. Cas. 60; Corning *v.* Burden, 15 Howard, 270; Tucker *v.* Spalding, 13 Wallace, 453.

[3] Ely *v.* Mon. & Brim. Mfg. Co. 4 Fish. Pat. Cas. 80.

[4] P. & T. R. R. *v.* Stimpson, 14 Peters, 463.

question whether a Patent is void for uncertainty and ambiguity in the description is stated by Judge Story to be "a matter of fact to be decided upon the evidence "of experts."[1] The class of experts most appropriate upon the question last named is indicated in *Allen* v. *Blunt, supra*.[2] The competency of expert testimony as to the comparison of a machine with a Patent or of one Patent with another, would at first sight seem to conflict with the rule of evidence, making the construction of written instruments matter of law and the province of the Court alone, but the apparent inconsistency disappears upon the recognition of the fact that "it is not the *construction of the instrument* but "the *character of the thing invented*, which is sought in "questions of identity and diversity of inventions."[3]

Without noticing in detail the numerous applications of science in which the evidence of expert witnesses, is, if not absolutely essential, at least of material assistance in the administration of justice, we may consider it as universally conceded, that when properly presented, and within its legitimate scope, the use of such evidence is approved of by Courts, and that the services of experts of ability and integrity are, and should be of right, sought for and appreciated by suitors. In cases where an intelligent examination of the technical question is not necessarily limited to the abilities of an expert, the distinction between skilled

[1] Washburn *v.* Gould, 3 Story, 138.
[2] 3 Story, 748.
[3] Bradley, J., Bischoff *v.* Wethered, 9 Wallace, 816.

and ordinary testimony is quantitative not qualitative,[1] and in such event the expert witness may either be competent, or inadmissible, because superfluous, according to the particular circumstances of the case. Reference may be made by experts to professional treatises for the purpose of refreshing their recollection,[2] and such works may be cited by the expert as ground for opinions he advances, but they are inadmissible in evidence[3], doubtless for the reason that the law considers they would involve a useless consumption of time and prove rather an impediment than an auxiliary, if submitted for the examination of men not assumed to be competent to understand their contents.

In the dissenting opinion of Judge Doe in *State* v. *Pike*, before referred to,[4] the learned judge, citing many authorities in support of his position, states that at common law, the judge may give the jury his opinion of the weight of any part or of the whole of the evidence, with the limitation that he is not to give the opinion as imperative upon them, or as infringing upon their province as judges of the facts. The propriety of such instruction would seem to be entirely logical, for the ripe education and mature experience, which, as a rule, prevail upon the bench, render the judge an expert, who is as fitting an exponent in the matter of *evidence*, as is the physician, the chemist,

[1] People *v.* Fernandez, 35 N. Y. 49.
[2] 2 Taylor Ev. 1232, 1234; 1 Wharton Ev. § 438.
[3] 1 Greenleaf Ev. 484, n. 1.
[4] 49 N. H. 399; S C., 6 Amer. Rep. 533.

or the engineer in his particular science. In the operations of the ordinary mind, the weight of evidence does not, in all cases, bear a due ratio to its intrinsic merit or value, and instruction from a source wherein we may justly expect is combined high ability and sterling integrity, while it cannot in any event, impede the solution of the truth, visibly tends to promote it.

III. The abuse of Expert Testimony.

An examination, even though superficial, of the subject of skilled evidence, from whatever point of view it may be made, will not fail to indicate the liability, in the operation of the system, to misapplication and perversion of its functions, though administered under the government of rules which have been well considered and enforced with a reasonable degree of strictness. Ability and truthfulness are the desiderata to be sought in the expert, as in the witness as to facts, and the law has provided as efficient means as it can devise for their attainment. He who testifies falsely as to his *belief* can be convicted of perjury, equally with the man who swears falsely as to fact,[1] but the proof is in any event much more difficult in the former than in the latter case, and in many instances, would practically be impossible. Again, though the law theoretically provides so high a standard of qualifications for the

[1] 2 Taylor Ev. 1227.

expert, as might be presumed to insure his sufficient skill, and further, enables his ignorance to be indicated or his errors refuted, by cross-examination and controverting testimony, yet the inability of men in general to investigate, without assistance, the questions which the expert deals with, embarrasses the process of detecting his unfitness in the first instance, and of counteracting the obscurity or false impressions produced by his testimony, if erroneous.

The evils resulting from want of integrity or competent ability on the part of the expert witness, obtain likewise, with a difference of degree, in the case of the ordinary witness, and must be left for reformation or cure, to the judicious observance of the precautionary measures which the law provides. The salient objection, however, which presents itself in the application of skilled evidence, and one which is, of necessity, peculiar to the system, is the effort frequently made, with more or less success, to expand and pervert the functions of an expert from the exposition of scientific and technical rules or practice, to the statement or discussion of questions of moral or municipal law.

While due credence is properly to be given to the expert upon questions of a really scientific character, his position as a man of science must be fully established, and his testimony be free from suspicion of interest, bias or prejudice, when the right to recover depends entirely on his opinions.[1] In this

[1] Schulz *v.* U. S., 2 Nott & Hunt., 380.

case, claim was made upon the Government for damage by the breaking down of a ferry boat's engine, alleged to have been occasioned by undue and improper strains produced by service not within the provisions of her charter, and made compulsory by officers of the Government. The evidence offered in support of the allegation, was the testimony of the captain and engineer, whose opinions were to the effect as alleged, but the Court held that they were not shown to possess sufficient expert qualifications, and this, coupled with their supposed bias in favor of the claimant, led to the rejection of the claim. Had the evidence of competent and disinterested experts been adduced, as for example, that of machinists who repaired the engine, or engineers conversant with its degree of strength and principles of construction, it can scarcely be doubted that a different decision would have been rendered.

The *indefiniteness* which is often a characteristic of expert testimony, while an objectionable feature, cannot, from the nature of the inquiry and the caution which the witness, in view of probable cross-examination, is justifiable in exercising, be well avoided or materially reduced. Hypothetical considerations must, to a certain degree, form the basis of the testimony, and the witness may often be required to answer upon an assumption which he is neither entitled nor willing to declare to be positively true. The statement of the expert that, "as he understands it" thus and so is the case, implies that as *another* of

equal ability understood it, the reverse might be true, yet the qualification, however much it may operate to weaken the confidence of the juror in the strength of the evidence, cannot be considered unreasonable or improper, and its plausibility can be tested by the reasons given in support of the opinion. We have seen (*U. S.* v. *McGlue*, *supra*)[1] that an approved form of examination is to interrogate the witness upon an assumed state of fact, and his answer may, with equal propriety, be predicated upon the assumed truth of asserted scientific laws, or the correctness of his understanding of their scope and application. It is, nevertheless, clear that the limits of authorized circumspection on the part of the expert witness may be, and often are transcended to an extent such as to render his testimony so obscure and indefinite as to be of little or no value in elucidating the matter at issue.

Experts are not permitted to give their opinion as to legal or moral obligation, nor as to matters with which a jury may be supposed to be equally well acquainted.[2] It has been held that a medical man may be asked whether the facts stated by other witnesses, if true, show a state of mind incapable of distinguishing between right and wrong,[3] the admission of which testimony would seem to be hardly warranted by the rule, and it is probable that in many cases involving

[1] 1 Curtis, 9.
[2] 1 Phillips Ev. 780; 2 Taylor Ev. 1230.
[3] McNaghten's Case, 10 Cl. & Fin. 200.

the complex and difficult subject of insanity, the functions of the expert are often unduly and perhaps injuriously exercised.

The direction in which the law most explicitly limits and restrains skilled evidence, is as to the expression of opinion on matter of law, which is under no circumstances permissible. The construction of written instruments being purely within this classification, and being an instance which in practice presents, possibly to a greater extent than any other, opportunities for an attempted violation of the general rule, has been specifically indicated by the Courts, whenever brought into question, as a matter wholly outside the sphere of expert testimony.[1] We find in Patent cases frequent instances wherein the expert, under the guise of explaining the respective characters of the thing invented and of that with which it is under comparison, a duty which, as indicated in *Bischoff* v. *Wethered* (*supra*),[2] is within the line of his duty, does in point of fact assume and enunciate a construction of the meaning and scope of the Patent which is matter of law and determinable only by the Court. Law and fact are, in this class of cases, frequently so closely blended, that it may be difficult to clearly draw the line between them, and to determine where the province of the witness ends and that of the Court

[1] Stearine *v.* Kaarsen Fabrik Gonde *v.* Heurtzman, 17 Com. Bench, N. S. 56; Corning *v.* Burden, 15 Howard, 270; Winans *v.* N. Y. & E. R. R., 21 Howard, 88; French *v.* Rogers, 1 Fish. Pat. Cas. 150; Parker v. Hatfield, 1 McLean, 61.

[2] 9 Wallace, 816.

begins, but a careful discrimination in the investigation of all testimony which embodies the possibility or probability of exceeding, in this regard, its legitimate limits, is of the most material importance on the part of Court and counsel, and, when duly exercised, will be sufficient, in most instances, to overcome the tendency to error and misuse which accident or design may develop. We have seen that in various departments of evidence the use of expert testimony is recognized as essential to the administration of justice, and we notice no other direction, except this tendency to trench upon the "constructive" province of the Court, in which there is danger of perverting this use into an abuse, beyond the ordinary motive which lead to corrupt evidence, nor any special precautions applying against such abuse, that are not equally applicable to the prevention of analogous abuse of testimony of other character.

Reviewing the advantages and objections which respectively manifest themselves in the consideration of the subject of skilled evidence, we are led to the conclusion that while its employment is not to be disapproved of, the administration of an increased degree of reformatory discipline in its application is to be desired. With a Court and jury acting as umpire between contending parties who maintain, with all earnestness and vigor, their respective positions, and are endowed with power, which is only in a partial degree limited, to select and manipulate the instruments by means of which they seek to

prevail, and upon which the arbiters must, to a great degree, rely in the formation of their judgments, it is impossible that error or fraud shall not at times exert a deleterious, if not a fatal influence. A measure of relief, which has been more than once speculatively suggested by reformers, consists in making the expert witness an independent element, indifferent between the parties, and uncontrolled either by interest or prejudice in the determination of the issue, by constituting him, not the advocate or adherent of either side, but an impartial referee appointed by the Court, committed to neither party and fulfilling, in his subordinate capacity and degree, determining functions, initial and auxiliary to those performed by the final arbiters. In view, however, of the difficulty of obtaining arbitrators qualified to dispose of cases involving the entire range of the learned professions and of applied science, the proposition, though sound in theory, fails as to practicability so far that it can hardly be realized in the near future, and our conclusion is that the now well established practice is perhaps all that is attainable, the expert witness informing the Court or jury, and the Court and counsel maintaining the proper line of demarcation between the law and the facts.

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